Date: Sat, 19 Mar 94 04:30:38 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #66
To: Ham-Homebrew

Ham-Homebrew Digest Sat, 19 Mar 94 Volume 94 : Issue 66

Today's Topics:

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

Date: 17 Mar 1994 16:17:17 GMT
From: ihnp4.ucsd.edu!agate!doc.ic.ac.uk!lyra.csx.cam.ac.uk!pavo.csi.cam.ac.uk!pipex!uknet!EU.net!Germany.EU.net!netmbx.de!zib-berlin.de!news.belwue.de!news.uni-stuttgart.de!rz.@network.
Subject: 10-50KHZ Tranceivers ???
To: ham-homebrew@ucsd.edu

Hello together,
i plan to home-brew some very long waved tranceivers in an walky-talky
format. Are there any experiences with such area ? Any schematics,
PCB-Layouts? Where can i get infos abt Ferrit-Antenna-Design ?
would be vy glad to see some responses here ore via mail.
tnx and vy 73 de peter dh1iar

Date: 17 Mar 94 15:50:34

From: ihnp4.ucsd.edu!library.ucla.edu!agate!msuinfo!netnews.upenn.edu!
mipg.upenn.edu!yee@network.ucsd.edu
Subject: Capacitor code (NOT color code)
To: ham-homebrew@ucsd.edu

Well, I have some capacitors that have 10M listed on them. I know
that the M is the EIA code for 20% tolerance but am having trouble
with the 10 part since if it were 10pF it should read 100. [I was told
the caps were 10pF.] I can't find a code anywhere with only two digits.
Underneath the 10M code were the EIA codes for temperature and the
code 1KV which I interpret to mean that it can handle 1 Kilovolt.

--
Medical Image Processing Group | Conway Yee, N2JWQ
411 Blockley Hall | EMAIL : yee@mipg.upenn.edu
418 Service Drive | VOICE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA) | FAX   : 1 (215) 898-9145

Date: Thu, 17 Mar 1994 17:44:08 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!news1.oakland.edu!
rcsuna.gmr.com!kocrsv01!jcbach@network.ucsd.edu
Subject: Capacitor code (NOT color code)
To: ham-homebrew@ucsd.edu

In article <2m332n$l53@msuinfo.cl.msu.edu>, cravitma@cps.msu.edu (Matthew B
Cravit) writes:
> Someone help!
>
> I obtained a pack of about 500 disc capacitors, and they are all
> labelled with a code which I do not understand and have not found any
> reference for so far (ARRL handbook etc). For example, what _looks_
> like a .1 uF capacitor is labelled "102Z".
>
> Can someone mail me or post a translation of these codes?
>
> BTW, I assume this is _not_ the tolerance coding, since there is only

My prsumtion, based on the MANY capacitors I've run across, is that the "102"
stands for 1000 pF (i.e. .001uF), where the "1" and the "0" are the value and
the "2" is the multiplier (works just like resistor color code, but can be
done in black ink only . . .)

As for the "Z", it's probably a tolerance.

Digi-Key sells Panasonic ceramic disks, and according to the part numbers
listed:

```
     "J" = 5%
     "K" = 10%<-- most of the caps we use 'round here
     "Z" = +80%/-20%
     "M" = 20%


A .1uF would be a "104", i.e. 100,000pF or 100,000/1,000,000=.1uF
                                 =====
                                  "4"
```


```
--
James C. Bach              Ph: (317)-451-0455     The views & opinions expressed
Advanced Project Engr.     GM-NET: 8-322-0455     herein are mine alone, and are
Circuits Bldg Blocks Grp   Amateur Radio: WY9F    NOT endorsed, sponsored, nor
Delco Electronics Corp.    Just say NO to UNIX!   encouraged by DE or GM.
```

Date: Thu, 17 Mar 1994 14:21:33 GMT
From: ihnp4.ucsd.edu!agate!boulder!csn!erik@network.ucsd.edu
Subject: Converting CB to 10 meters
To: ham-homebrew@ucsd.edu

I have had several QSOs with people on 10 meters who were using converted CBs. I have a CB sitting in my junk box and was wondering if it could be put to use in the 10 meter band. Is there some service center I can send it to have it done? Is it something I can do myself? (The CB in question is a Cobra Model 19 Plus, manufactured in 1988.) In general, how hard is it to do this (ie maybe easier on older model CBs)?

Enquiring minds want to know. :-)

TNX and 73,
Erik


```
--
Erik Mugele       *    erik@csn.org     * "O child learn your ABZ's
                  *   mugele@sil.org    * and memorize them well
Ham Radio: N5XYX  *  No NeXTMail yet!   * and you shall learn to talk and think
DoD #: 1030       * Phone: 719.550.6202 * and read and write and spel."
```

Date: Wed, 16 Mar 1994 16:06:08 GMT
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!grian!pelican!ent-img.com!wb6hqk!

bart@network.ucsd.edu
Subject: Meter Shunts, etc
To: ham-homebrew@ucsd.edu

In article <tgmCMqqA2.3ru@netcom.com>,
Thomas G. McWilliams <tgm@netcom.com> wrote:
>Doug Snowden (drs@ccd.harris.com) wrote:
>: I know I can figure out the resistance of a foot of # xx wire
>: for a shunt. Also, I haven't found any sort of chart that has the resistance
>: of wire.
>
>The ARRL handbook has a wire table in it somewhere (at least older
>handbooks did, I don't know about the most recent). Look in the
>data section of the handbook (or check the index).
>
A handy rule of thumb for that's within a few percent for soft drawn copper wire
is as follows:

  1) Wire cross sectional area changes by a factor of 10 every 10 wire
      gauge (AWG) units and approximatly doubles every 3 units. Sound
      familier? Wire cross sectional area closely follows the DB scale.

  2) #40 AWG soft drawn copper has a resistance of about 1.0 ohm per foot
      at room temperature. #10 AWG is 0.001 ohm per foot or 1.0 ohm
      per thousand feet.

I've found these relations generally accurate enough to make a first cut at
meter shunts and estimating cable loss.

bart

bart@wb6hqk.ent-img.com

Date: Thu, 17 Mar 1994 19:29:47 GMT
From: ihnp4.ucsd.edu!sdd.hp.com!hp-cv!hp-pcd!hpcvsnz!tomb@network.ucsd.edu
Subject: Meter Shunts, etc
To: ham-homebrew@ucsd.edu

Alan Bloom (alanb@sr.hp.com) wrote:
: Thomas G. McWilliams (tgm@netcom.com) wrote:
: : Doug Snowden (drs@ccd.harris.com) wrote:
: : : I know I can figure out the resistance of a foot of # xx wire
: : : for a shunt. Also, I haven't found any sort of chart that has the resistance
: : : of wire.

: : The ARRL handbook has a wire table in it somewhere (at least older

: : handbooks did, I don't know about the most recent). Look in the
: : data section of the handbook (or check the index).

: Be aware that copper has a strong temperature coefficient (about 0.4%
: per degree C), so a meter shunt made of copper wire will not be
: accurate over a wide temperature range.

I agree with Al on this, and note that the same is true of aluminum and
steel. (Steel is actually a bit worse.)

HOWEVER, if the meter is wound with copper wire, then it's also going to
have a resistance change with temperature. Are meters commonly wound
with copper for good conductivity, or some special temperature-
compensated alloy? If the former, and you use a big enough shunt that
it stays essentially at ambient and you put it right at the meter, then
a copper shunt would actually be the best, in that it would maintain a
constant ratio of division of the current between the two paths. Also,
if there _is_ significant heating in the shunt, beware of thermocouple
effects! These will be minimized if you use the same material for
conductors throughout the meter loop. You can get the Kelvin connection
Al mentioned if you make your own copper wire shunt by soldering leads
onto the shunt wire, a bit in from the ends, to go to the meter, and
making connection to the "free" ends of the shunt wire for the current
path.

73, Tom -- K7ITM

Date: Fri, 18 Mar 1994 16:11:25 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei!ke4zv!gary@network.ucsd.edu
Subject: Meter Shunts, etc
To: ham-homebrew@ucsd.edu

In article <CMuBIu.5MC@hpcvsnz.cv.hp.com> tomb@lsid.hp.com (Tom Bruhns) writes:
>: A quick and easy method to find the internal resistance of an unknown
>: meter is to put a pot and power supply in series with it and adjust the
>: pot for a full scale reading. Now put another pot across the meter and
>: adjust it until the meter reads half scale. Read the value of the pot
>: with an ohmmeter (out of circuit) and you'll have the internal resistance
>: of the unknown meter.
>
>Be sure the series resistor has a much higher resistance than the
>meter, or the second pot will affect the total current significantly.

Good point. The idea is that the series resistor and PS form a constant
current source, so the series resistor value has to be significantly
higher than the meter and shunt resistances. If you have an adjustable

lab supply that can be configured as a constant current source, you
can use that directly instead.

>: The internal resistance of a meter is a function of meter type and
>: meter sensitivity (obviously). In a moving coil meter, you can think
>: of the movement as a motor stalled against a spring, and the resistance
>: is a result of the motor stall torque against the spring.
>
>In other words, just the resistance of the coil and connecting wires
>(possibly with internal shunt...) But it's a good point that such
>a meter is a motor--or generator. If you shake the meter (specifically
>rotate it) it will generate some voltage (unless you shake it so hard
>it falls apart inside ;-).

Well no, the stall current is different than just that which you'd
have with only the resistance of the windings and possible internal
shunt. Otherwise you could just measure the unknown meter with an
ohmmeter. That most assuredly won't give the correct result with a
moving coil meter. That spring in the meter is placing a real load
on the "motor" that's reflected in the apparent resistance of the
coil. The work of fighting that spring isn't free.

Gary
--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: 17 Mar 94 14:06:12 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!vixen.cso.uiuc.edu!
moe.ksu.ksu.edu!cis.ksu.edu!mac@network.ucsd.edu
Subject: QRP Designs
To: ham-homebrew@ucsd.edu

bobspreen@aol.com (BobSpreen) writes:
>In addition to QRP Classics, try Doug Demaw's "QRP Notebook" and "Solid State
>Design for the Radio Amateur", both ARRL publications.

And SPRAT, the QRP journal from the United Kingdom
(available via an address--it's at home--in the US.)

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, jury, witness, and cartridge.
Myron A. Calhoun, PhD EE; Assoc. Professor (913) 539-4448 home

INTERNET: mac@cis.ksu.edu 532-6350 work, 532-7353 fax
UUCP: ...rutgers!depot!mac Packet radio: W0PBV@N0ARY.#NOCAL.CA.USA.NA

Date: Fri, 18 Mar 1994 04:11:50 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!howland.reston.ans.net!wupost!csus.edu!
netcom.com!tgm@network.ucsd.edu
Subject: Whats the loss across a BNC to PL259 ?
To: ham-homebrew@ucsd.edu

Ronald Viegelahn (ron@etch-eshop.Berkeley.EDU) wrote:
: Does anyone happen to know what the insertion loss would be
: of a BNC to PL259 adapter at ~144 (2m band) ?

I don't know of the exact figures, but at 144 MHz and considering
your application it should not be too significant or cause problems.
Considering the Z presented to most HTs by rubber duckies, this
application should be an improvement.

: The ht has a BNC output and the amp has a SO238 input. Would
: changing the SO238 to a BNC change the input impeadance enough
: to cause enough of a missmatch to be concerned about ?

I'd just use the adaptor and see if it works ok. I don't
see any serious problems at 2m. You are correct to take
this into consideration however. But if every station had
to be perfectly theoretically correct, no communication would
take place!

73,

Thomas KI4N

Date: 17 Mar 1994 17:15:56 GMT
From: ihnp4.ucsd.edu!agate!etch-eshop.Berkeley.EDU!ron@network.ucsd.edu
Subject: Whats the loss across a BNC to PL259 ?
To: ham-homebrew@ucsd.edu

  Does anyone happen to know what the insertion loss would be
of a BNC to PL259 adapter at ~144 (2m band) ?

 I plan on using my kenwood ht to drive a henry radio 50W amp.

 The ht has a BNC output and the amp has a SO238 input. Would
changing the SO238 to a BNC change the input impeadance enough

to cause enough of a missmatch to be concerned about ?

Thanks and 73's

Ron V

ron@etcheshop.Berkeley.EDU

Date: Fri, 18 Mar 1994 15:45:20 GMT
From: ihnp4.ucsd.edu!swrinde!emory!news-feed-2.peachnet.edu!darwin.sura.net!nih-csl!helix.nih.gov!mack@network.ucsd.edu
Subject: Whats the loss across a BNC to PL259 ?
To: ham-homebrew@ucsd.edu

In article <2ma38c$p48@agate.berkeley.edu> ron@etch-eshop.Berkeley.EDU (Ronald Viegelahn) writes:
>
> Does anyone happen to know what the insertion loss would be
>of a BNC to PL259 adapter at ~144 (2m band) ?
>
> I plan on using my kenwood ht to drive a henry radio 50W amp.
>
> The ht has a BNC output and the amp has a SO238 input. Would

I've had no end of wierdness dealing with RG-58 and poor quality connectors. When I changed all my SO/PL connectors to N and changed my coax to RG-142 (teflon-same size as RG-58 and I used crimp on N-connectors on it), my output power went from 80W to 110 W out of my 2m brick. So rather than worrying about these adaptors, change to a more reliable
system

Joe Mack NA3T
mack@ncifcrf.gov

Date: Thu, 17 Mar 1994 22:33:15 +0000
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!pipex!demon!gqrp.demon.co.uk!g3rjv@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <mac.763913245@depot.cis.ksu.edu.cis.ksu.edu>, <763936883snz@gqrp.demon.co.uk>, <mac.763940386@depot.cis.ksu.edu.cis.ksu.edu>
Reply-To : g3rjv@gqrp.demon.co.uk

Subject : Re: QRP Designs

In article <mac.763940386@depot.cis.ksu.edu.cis.ksu.edu>
mac@cis.ksu.edu "Myron A. Calhoun" writes:

>
> I've been a SPRAT member for 2-3 years, but I've never heard of
> the CIRCUIT HANDBOOK; what's in it?
>
A collection of articles from the 1st 7 years of SPRAT in book form. We
also do an Antenna Handbook : the complete collection of SPRAT antenna and
related materials from issue 1 to 1992. Both can be had from N8ET, will
also have them on our Dayton booth - Going?
--
George Dobbs G3RJV
G-QRP Club

Date: Thu, 17 Mar 1994 20:41:23 +0000
From: ihnp4.ucsd.edu!swrinde!emory!europa.eng.gtefsd.com!howland.reston.ans.net!
pipex!demon!gqrp.demon.co.uk!g3rjv@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <757959931.AA04531@rochgte.fidonet.org>,
<2m8nc6$m25@search01.news.aol.com>,
<mac.763913245@depot.cis.ksu.edu.cis.ksu.edu>g3rjv
Reply-To : g3rjv@gqrp.demon.co.uk
Subject : Re: QRP Designs

In article <mac.763913245@depot.cis.ksu.edu.cis.ksu.edu>
mac@cis.ksu.edu "Myron A. Calhoun" writes:

> bobspreen@aol.com (BobSpreen) writes:
> >In addition to QRP Classics, try Doug Demaw's "QRP Notebook" and "Solid State
> >Design for the Radio Amateur", both ARRL publications.
>
> And SPRAT, the QRP journal from the United Kingdom
> (available via an address--it's at home--in the US.)
>
> --Myron.

A request to me will receive a sample of SPRAT and a membership application
form. Also suggest G QRP Club CIRCUIT HANDBOOK available from N8ET
(n8et@delphi.com)

--
George Dobbs G3RJV

Date: Fri, 18 Mar 1994 07:00:55 GMT
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa
To: ham-homebrew@ucsd.edu

References <2m332n$l53@msuinfo.cl.msu.edu>,
<1994Mar17.174408.7830@kocrsv01.delcoelect.com>,
<YEE.94Mar17155034@mipgsun.mipg.upenn.edu>
Subject : Re: Capacitor code (NOT color code)

In article <YEE.94Mar17155034@mipgsun.mipg.upenn.edu> yee@mipg.upenn.edu (Conway Yee) writes:
>Well, I have some capacitors that have 10M listed on them. I know
>that the M is the EIA code for 20% tolerance but am having trouble
>with the 10 part since if it were 10pF it should read 100. [I was told
>the caps were 10pF.] I can't find a code anywhere with only two digits.
>Underneath the 10M code were the EIA codes for temperature and the
>code 1KV which I interpret to mean that it can handle 1 Kilovolt.

Just like English spelling rules, there's exceptions. If the pF is
100 or less the actual value is stamped on the cap.

Here's a neat way to measure capacitance: Use a 120VAC to 12VAC
transformer and place your unknown cap in series with a high-valued
resistor (megohm range) across the 12VAC and measure the voltage drop
across the cap. Frequency is 60Hz, compute Z = E/I, use Z formula to
compute capacitance (or inductance, too!).

Cheapest L/C meter in town!

73,
Jeff NH6IL

End of Ham-Homebrew Digest V94 #66
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